

## ABSTRACT OF THE DISCLOSURE

A system and method are provided for statistical-multiplexing, comprising a multi-criteria optimization algorithm for video bit stream control, and an alignment of average video bit-stream rates with treatment priorities of cascaded multiplexer's inputs. The first criterion is a grouping of the encoders in accordance with content recipient's wishes. The second criterion involves adjusting the proportions of the average bit rates of the bit streams, wherein these proportions are represented in the form of integer-to-integer fractions, in accordance with the calculated optimal scanning arrays of a plurality of said cascaded multiplexers. The third criterion involves a definition of different bit-rate ranges for different groups of encoders and maintaining the average bit rates for each group of encoders according to flexible bit rate ranges, thereby providing the adjusting of the proportions of the average bit rates to be in said form of integer-to-integer fractions, providing a laminar bit stream finally combined as the output of the last of the cascaded multiplexers.